

U.G. 4th Semester Examination - 2021**COMPUTER SCIENCE****[HONOURS]****Course Code : COM.SC-H-CC-L-410****(Database Management Systems)**

Full Marks : 30

Time : 1½ Hours

*The figures in the right-hand margin indicate marks.**Candidates are required to give their answers in their own words as far as practicable.***GROUP-A**1. Answer any **five** questions : $2 \times 5 = 10$

- a) What is data redundancy?
- b) What do you mean by metadata?
- c) What is data dictionary?
- d) What are the different levels of abstraction?
- e) What are the semantic constraints in SQL?
- f) What are assertions? Give an example.
- g) What is lock-based protocol?
- h) What do you mean by weak entity set?

*[Turn over]***GROUP-B**2. Answer any **two** questions: $5 \times 2 = 10$

- a) Define Schema. Explain three level architecture in DBMS. $1+4=5$
- b) Explain the utility of the commands with respect to SQL: (i) rename (ii) alter (iii) view (iv) order by (v) group by. 5
- c) Explain different types of anomalies in relational database. 5
- d) What is functional dependency? Explain its use in database design. $1+4=5$
- e) Explain shared lock and exclusive lock with the help of example. 5

GROUP-C3. Answer any **one** question: $10 \times 1 = 10$

- a) What is BCNF? "BCNF is stronger than 3NF" – Justify. Why concurrency control is required in DBMS? $2+3+5=10$
- b) Name different types of database users. What are the roles of DBA? Describe the client-server architecture for the database with necessary diagram. $2+2+6=10$

- c) What is NULL? What is its importance? How are these values handled in relational model? What is static hashing? What rules are followed for index selection? $2+2+2+2+2=10$
